

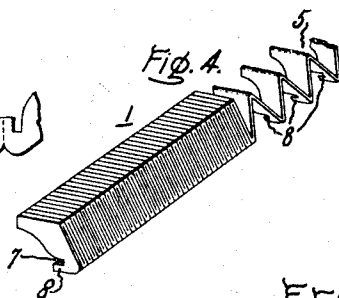
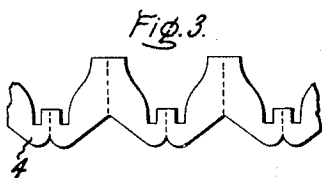
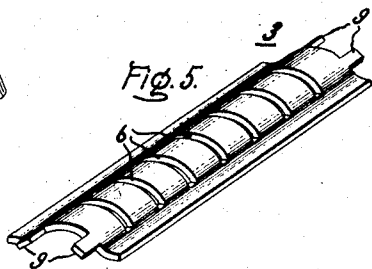
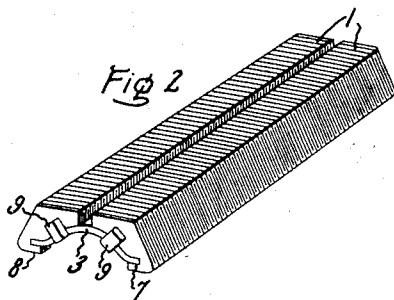
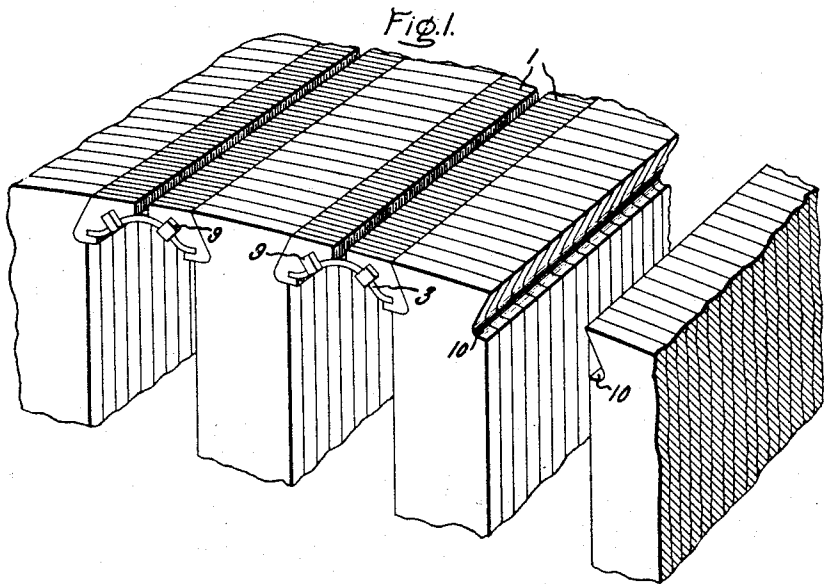
Sept. 24, 1935.

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2,015,554

MAGNETIC WEDGE

Filed Dec. 8, 1933



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UNITED STATES PATENT OFFICE

2,015,554

MAGNETIC WEDGE

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Application December 8, 1933, Serial No. 701,467

11 Claims. (Cl. 171-206)

My invention relates to magnetic wedges for closing the slots of dynamo-electric machines or the like.

Wedges of magnetic material and particularly 5 wedges formed of laminated magnetic material have substantial electrical advantages when used to close or partially close the slots of dynamo-electric machines. This type of wedge has presented the mechanical difficulties of complicated 10 assembly of the laminations and the further difficulty of holding the wedges in place in the slots of the dynamo-electric machine.

15 An object of my invention is to provide a magnetic wedge in which the laminations are formed by folding a strip of magnetic material so that folds of the material form transverse laminations.

Another object of my invention is to provide 20 a transversely laminated magnetic wedge having a simple means for holding the laminations in assembled relation.

Further objects and advantages of my invention will become apparent as the following description proceeds, and the features of novelty 25 which characterize my invention will be pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of my invention, reference may be had to the accompanying drawing in which Fig. 1 is a perspective view of wedges 30 embodying my invention used to close the slots of a dynamo-electric machine; Fig. 2 is a perspective view of one of the magnetic wedges shown in Fig. 1; Fig. 3 is a view of the strip of magnetic 35 material from which the wedge is formed; Fig. 4 is a perspective view of one of the side members of the magnetic wedge with a few of the folded laminations partially extended to show the manner of making the side members; and Fig. 5 is a 40 perspective view of the bridge member which connects the side members of the wedge and retains the laminations in assembled relation.

I have shown my invention applied to a magnetic wedge of the type having two side members 1 which are shaped to fit in notches formed 45 in the opposite sides of the slot of a dynamo-electric machine and which are connected by a bridge member 3. Each of the side members is formed by folding a strip of magnetic material 4 successively in opposite directions along the dotted lines indicated in Fig. 3, and pressing the adjacent folds together as indicated in the lower 50 end of Fig. 4. Before pressing the laminations together, the laminations may be coated with an insulating film to prevent the flow of eddy cur-

rents across the laminations. The manner of folding is shown in the extended portion 5 of Fig. 4, and is such that one of the folds of the strip which constitutes a transverse lamination of the wedge is joined to an adjacent fold on either side 5 of said lamination at the top and bottom edges of said wedge respectively. The bridge member 3 which connects the side members 1 of the magnetic wedge is preferably made of any suitable insulating or non-magnetic material in the form 10 of an arch with transverse slots 6 in the central portion of the arch.

The wedge is preferably assembled by placing the edges of a longitudinal bridge member 3 in 15 slots 7 in the inner faces of the side members 1 and by crimping the lower edges 8 of the laminations against the bridging member to securely clamp the bridging member in the recess 7. The deformation of the edges 8 of the laminations 20 causes the edges of the lamination to be clamped to the bridge member and grip the same, and since the edges of the laminations are secured to the bridge member, the bridge member retains the laminations in assembled relation, providing a unitary wedge construction which can be driven 25 into the slots. The bridge member may be secured to the edges of the laminations by pressing the member into the recess, by molding the member in the recess, by placing the member in the recess and expanding the member into tight 30 engagement with the edges of the laminations, or by other suitable methods. To further assist in retaining the laminations in assembled relation, tabs 9 at the ends of member 3 are bent upwardly to engage the ends of the side members 1. 35

The wedge is placed in the dynamo-electric machine by inserting or driving the wedge in the slots 10 which are notched to conform to the 40 outer edges of the side members 1. To assist in holding the wedge in place, the side members may be spread by deforming the bridge member 3 along the central portion between members 1, after the wedge is in place. The slots 6 in the bridge member make deformations of the bridge 45 member easier and also lessen the eddy current loss if the bridge member is of metal. To further assist in holding the wedge in place, the wedge may be impregnated with an insulating varnish or other compound.

Although I have shown a particular embodiment 50 of my invention, I do not desire to be limited to the construction described, and I intend in the appended claims to cover all modifications which do not depart from the spirit and scope of my invention. 55

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A magnetic wedge having a plurality of laminations extending transversely of the length of said wedge, said laminations comprising folds of a strip of magnetic material and having a recess extending longitudinally of said wedge, and means for providing a unitary construction including a member arranged in said recess and secured to the edges of said laminations for retaining said laminations in assembled relation.

2. A magnetic wedge having side members, each member having a plurality of laminations extending transversely thereof, said laminations comprising folds of a strip of magnetic material and having a recess extending longitudinally of each member, and means for providing a unitary construction including a member arranged in the recess in each member and secured to the edges of said laminations for holding said laminations in assembled relation and for connecting said side members.

3. A magnetic wedge having side members, each member having a plurality of laminations extending transversely thereof, said laminations comprising folds of a strip of magnetic material and having a recess extending longitudinally of each member, and a deformable bridge arranged in the recesses in said side members and secured to the edges of said laminations for joining said side members and retaining said laminations in assembled relation, said bridge being constructed so that the side members are spread apart when said bridge is deformed.

4. A magnetic wedge having side members, each member having a plurality of laminations extending transversely thereof, said laminations comprising folds of a strip of magnetic material and having a recess extending longitudinally of each member, one of said laminations being joined to an adjacent lamination on either side of said lamination at the top and bottom edges of said wedge respectively, and means for providing a unitary construction including a member arranged in the recess in each member and secured to the edges of said laminations throughout the length of said member for holding said laminations in assembled relation and for connecting said side members.

5. A magnetic wedge comprising side members of magnetic material having laminations extending transversely thereof, and means for providing a unitary construction including a member extending between the inner faces of said side

members for joining said side members and for retaining said laminations in assembled relation.

6. A magnetic wedge having a plurality of laminations extending transversely of said wedge, said laminations having a recess extending longitudinally along an edge of said wedge, and means for providing a unitary construction including a longitudinal member arranged in said recess and secured to the edges of said laminations for retaining said laminations in assembled relation.

7. A magnetic wedge comprising side members of magnetic material, each side member having laminations extending transversely thereof and having a longitudinal recess therein, and means for providing a unitary construction including a bridge member arranged in said recesses and secured to the edges of said laminations for joining said members and for retaining said laminations in assembled relation.

8. The method of constructing a magnetic wedge which comprises the steps of arranging a plurality of laminations extending transversely of said wedge and having a recess extending longitudinally of said wedge, placing a longitudinal member in said recess, and securing said member in said recess by deforming the sides of said recess to grip said member.

9. The method of constructing a magnetic wedge which comprises the steps of arranging a plurality of laminations extending transversely of said wedge and having a recess extending longitudinally of said wedge, placing a longitudinal member in said recess, and deforming the sides of said recess by crimping said laminations against said member so that the edges of said laminations are secured to said member.

10. A magnetic wedge having a plurality of laminations extending transversely of said wedge, said laminations having a recess extending longitudinally along an edge of said wedge, and means for providing a unitary construction including a longitudinal member arranged in said recess and gripped by said laminations for retaining said laminations in assembled relation.

11. A magnetic wedge having a plurality of laminations extending transversely of said wedge, said laminations having a recess extending longitudinally along an edge of said wedge, and means for providing a unitary construction including a longitudinal member arranged in said recess and gripped by the edges of said laminations for retaining said laminations in assembled relation.

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